Student Growth Percentiles (SGPs)

Michigan State Board of Education Meeting

November 18, 2014

What are SGPs and why do we need them?

- Student Growth Percentiles (SGPs) are a method for measuring student growth from year-to-year assessments.
- We need them because:
  - Michigan needs a measure of student growth that is available to more students, in more subjects
  - Understanding student growth is critical for
    - School improvement efforts
    - Closing achievement gaps
    - Fair accountability
    - Educator evaluations

DRAFT

Purpose of this Presentation

- Explain SGPs—how they are calculated, what they represent

- Receive feedback on SGPs as a method for measuring student growth.

- Discuss possible ways to communicate about SGPs with the field, with legislators, with other interested stakeholders

DRAFT

Student Growth Percentiles

- Student Growth Percentiles (SGPs) represent one powerful way to quantify the learning of individual students over time

- Conceptually, SGPs describe the variation of a student's learning compared to the learning of other students who had equivalent past test scores

In other words—how much did a student improve relative to her peers, given where she started in a previous year?

4

Student Growth Percentiles

In order to calculate SGPs

- Students are grouped with other students throughout the state who had equivalent scores on the previous test
- Students are then ordered in their group based on their score on the current year test
- Each student then receives a percentile rank based on their order in the group

# Student Growth Percentiles (SGPs)

- Basic questions
  - What is a Student Growth Percentile?
  - Why are SGPs helpful for parents and educators?
- Let's try to understand SGPs by looking at two students who appear to be very similar, but in reality, are very different

Jane

- Took the most recent grade 4 mathematics test
- Received a scaled score of 434,
    - which happened to be the state average, and
    - Placed her in the "Proficient" performance level.
- But how much of that is new learning?
- What was Jane's growth?

John
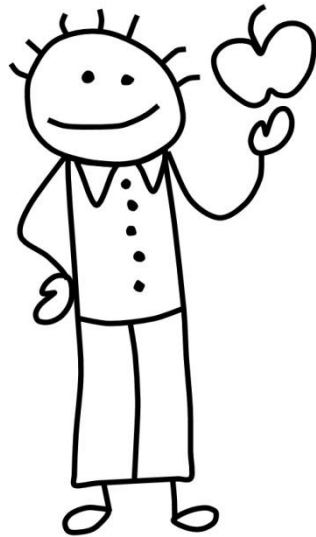
- Also took the most recent grade 4 mathematics test
- Also received a scaled score of 434,
  - which happened to be the state average, and
  - he was also in the "Proficient" performance level.
- But how much of that is new learning?
- What was John's growth?

One way to better understand Jane's growth would be to look at students who scored the same as Jane on last year's mathematics test.

One way to better understand Jane's growth would be to look at students who scored the same as Jane on last year's mathematics test.

MICHIGAN Department of Education

In reality, there are many students in Michigan who scored the same as Jane on last year's 3rd grade mathematics test, but let's imagine that there were only 10.

MICHIGAN Department of Education
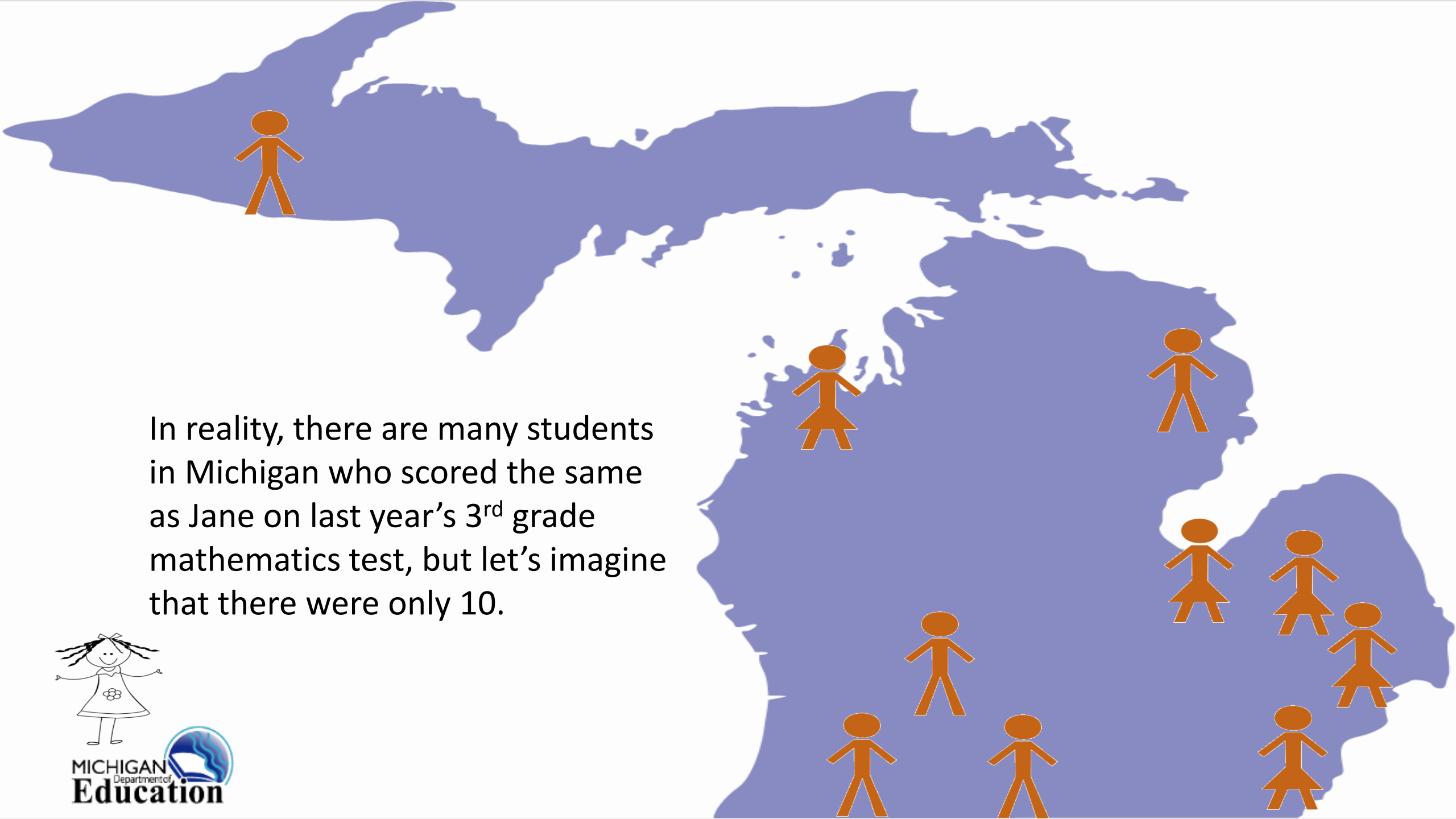
301

Each of these students scored a 301
on last year's 3rd grade mathematics test and
have now taken this year's 4th grade
mathematics test as well.

301

301

301

301

301

301

301

301

301

MICHIGAN
Department of
Education

375   376   382   390   395   408   421   430   432   448
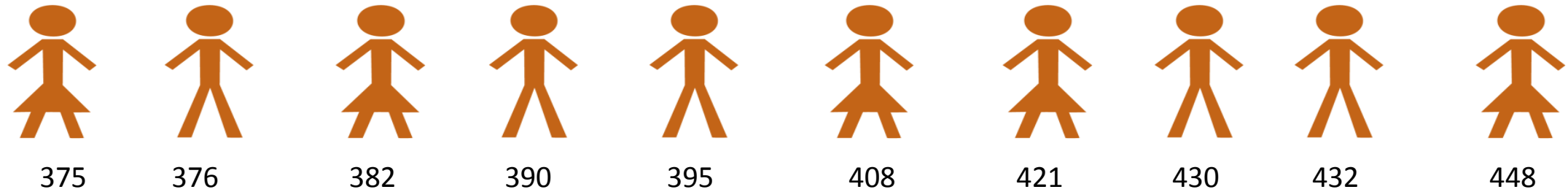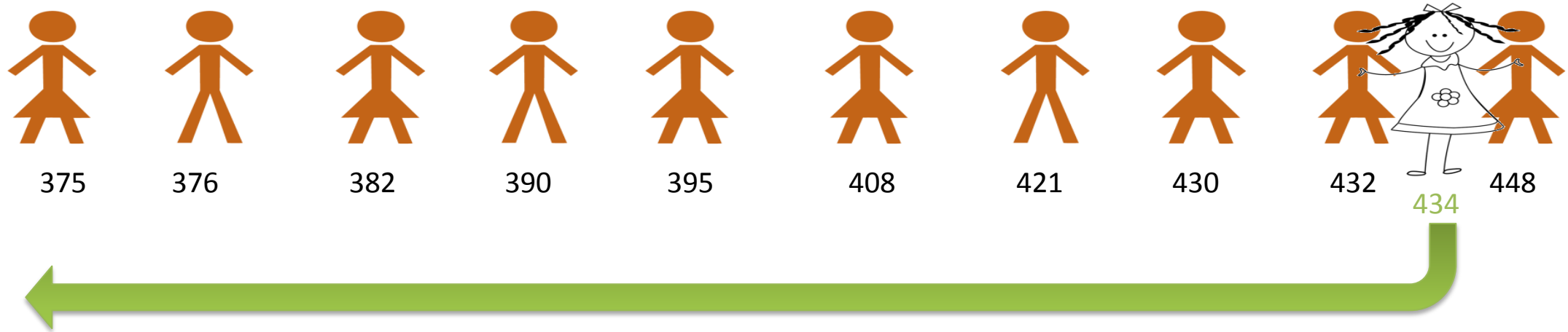
Let's order these students by their score on this year's mathematics test.

All these students had the same 3rd grade mathematics score (301).

375 376 382 390 395 408 421 430 432 448

But each of them scored differently on the 4th grade mathematics test.

434

All these students had the same 3rd grade mathematics score (301).

375   376   382   390   395   408   421   430   432   434   448

A Student Growth Percentile (SGP) of 90 indicates that Jane
scored better on the 4th grade mathematics test than 90% of the students
who started at the same point based on the previous test.

Let's go through that same process for John by identifying the students in the state who scored the same as John on last year's mathematics test.

Once again, in reality, there are many students in Michigan who scored the same as John on last year's mathematics test, but let's imagine that there were only 10.

MICHIGAN Department of Education

Each of these students scored a 364
on last year's 3rd grade mathematics test and
have now taken this year's 4th grade
mathematics test as well.

364

364

364

364

364

364

364

364

364

364

364

364

MICHIGAN
Department of
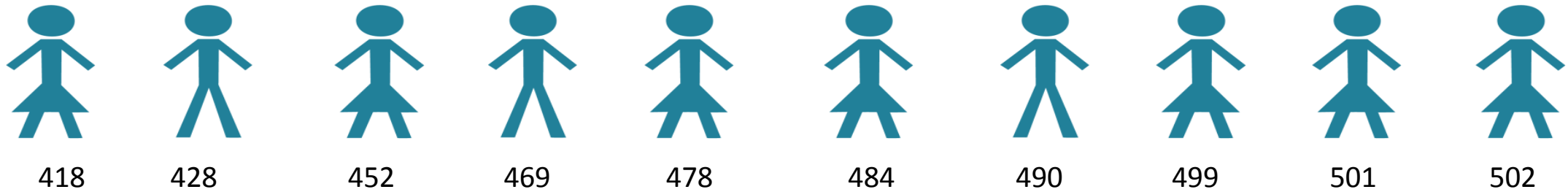Education

418   428   452   469   478   484   490   499   501   502

Once again, let's order these students by their score on this year's mathematics test.
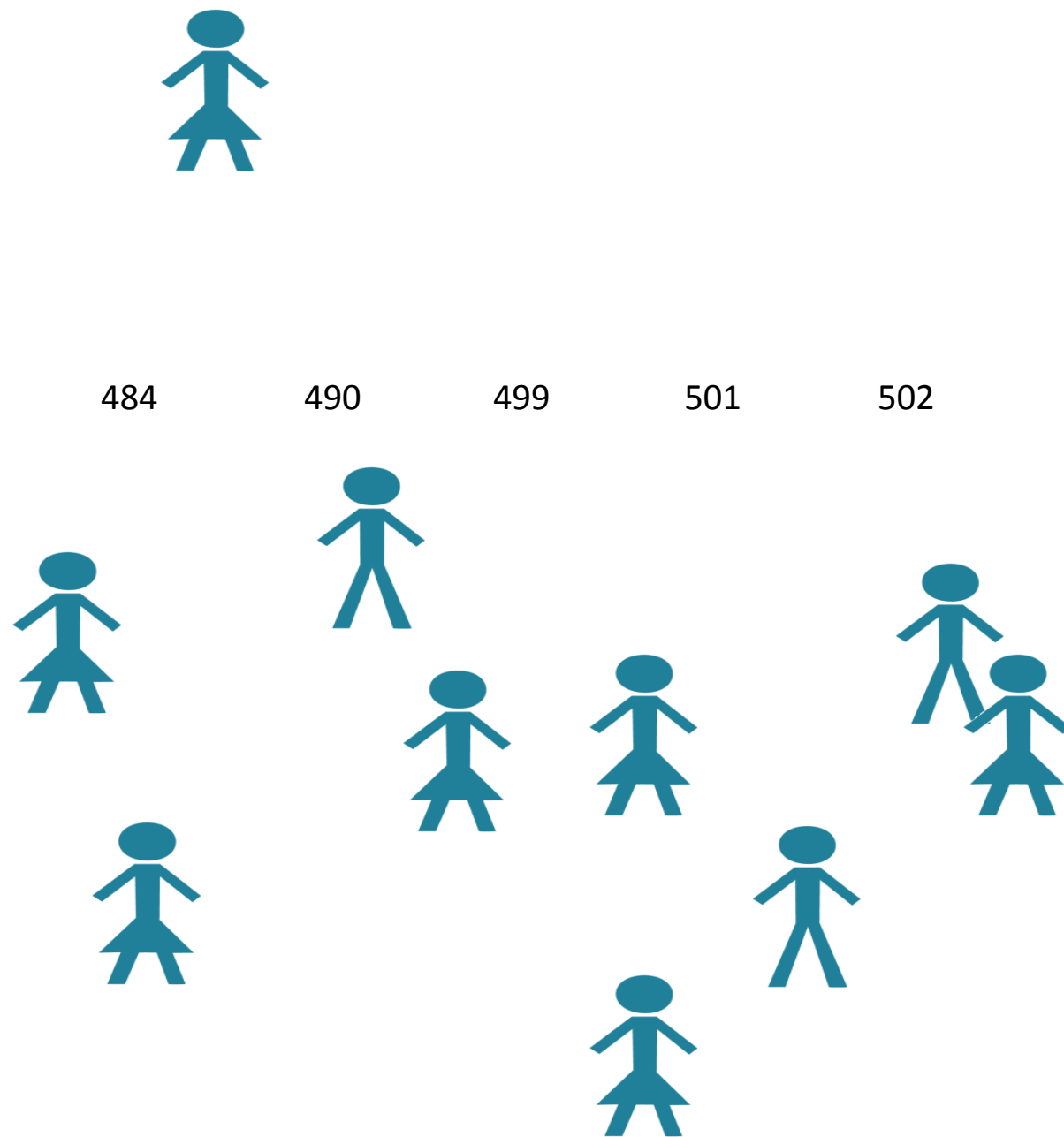
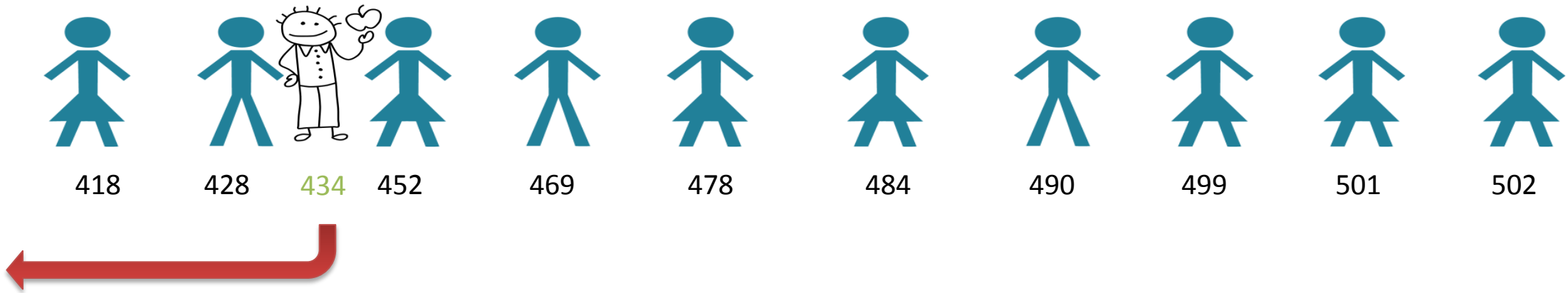Last year's mathematics score was 364 for all these students.

418	428	452	469	478	484	490	499	501	502

But each of them scored differently on the 4th grade mathematics test.

434

Last year's mathematics score was 364 for all these students

418   428   434   452   469   478   484   490   499   501   502

A Student Growth Percentile (SGP) of 20 indicates that John scored better on the 4th grade mathematics test than only 20% of the students who started at the same point as him on the previous test.

Even though Jane and John received the same score on the 3rd grade mathematics test, looking at their SGPs reveals that their growth is very different, and their academic progress in the last year varies significantly.

Jane's SGP of 90 shows her learning over time is greater than the majority of students who started at the same point as her.

John's SGP of 20 tells a different story. John's learning over time is less than other students who started at the same point as him.

Student Growth Percentiles

- Student Growth Percentiles (SGPs) describe a student's learning over time compared to other students with equivalent prior test scores

- An SGP of 50 shows average learning over time, with higher SGPs showing higher than average learning and lower SGPs showing lower than average learning

- SGPs are a very useful and powerful way to understand student learning over time

SGP "Information Sheet"

- An SGP of 50 means the student is demonstrating average growth
- Numbers greater than 50 mean higher than average growth
- Numbers less than 50 mean lower than average growth

Average learning over time

...lower than average learning

Higher than average learning....

0   50   99
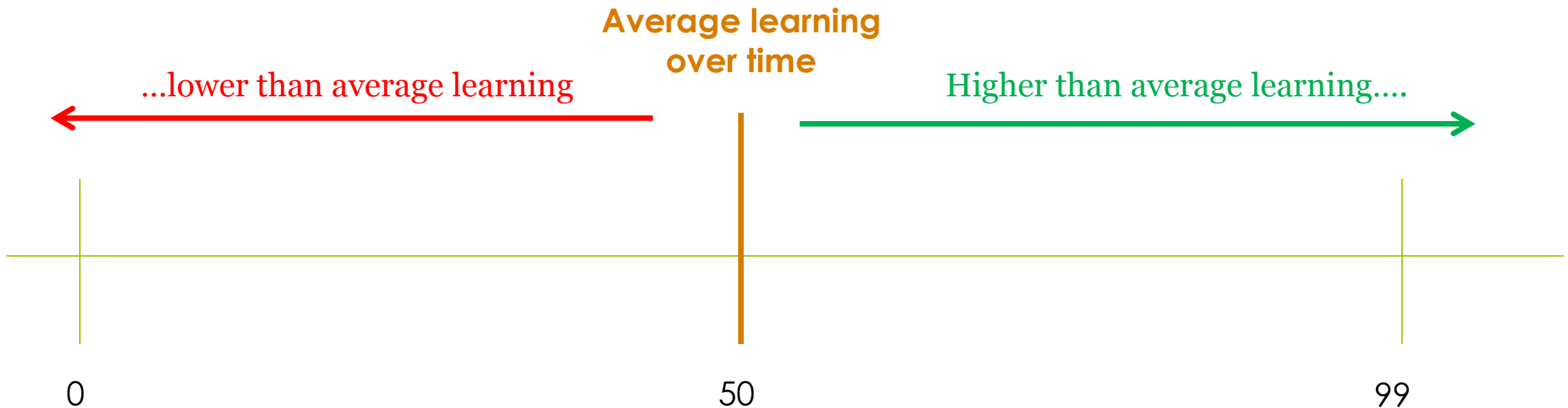
Strengths of using SGPs

- SGPs are more fair than other growth scores which assume that growth is equally likely at any ability level.
- SGPs are relatively accessible to non-technical audiences.
- Unlike performance level change (PLC) indices, SGPs can be validly used across assessment transition years.
- A test does not need to be administered every year to be able to calculate an SGP (for example, science and social studies)

Why are SGPs helpful for parents and educators?

- SGPs tell us how a student is progressing relative to other similar students.
- This is important to know if the student is learning as much as we expect based on our understanding of similar students.
- This gives parents and educators more information and a more complete picture than simply looking at a performance score.

Possible Uses of SGPs

- School improvement planning and achievement gap closure → helps diagnose where students are not *growing* so schools can target resources.

- Accountability → provides us with a more nuanced measure on more students to integrate growth into accountability designations

- Educator evaluations → provides student-level growth information from the state yearly assessments for districts to combine with local data in educator evaluations

DRAFT

Questions